



PATENT ABSTRACTS OF JAPAN

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(21) Application number: **2000325250**(22) Date of filing: **25.10.2000**(30) Priority: **25.10.1999 US 1999 425993**(71) Applicant: **HEADWAY TECHNOLOGIES INC**(72) Inventor: **CHIN TEII HON****JE WEI TSUAN****CHEN MAO-MIN****KOU TSUAN JII****MIN LEE****RO IN TON****(54) MAGNETIC SPIN VALVE HEAD AND METHOD FOR FORMING SAME****(57) Abstract:**

PROBLEM TO BE SOLVED: To provide a magnetic spin valve head having a good magnetic resistance ratio and such soft magnetic characteristics as a small coercive force H_c and a small anisotropic magnetic field H_k and a method for forming the head.

SOLUTION: When a spin valve sensor laminated body in which a ferromagnetic free layer 34 comprises only NiFe is formed, a seed layer 32 comprising NiFeCr or NiCr is formed on a substrate 30, the ferromagnetic free layer 34 comprising NiFe is formed on the seed layer 32 and a space layer 36 of a nonmagnetic metal (copper) is formed on the free layer 34. A ferromag-

netic magnetization direction pinned layer 38 comprising CoFe is formed on the spacer layer 36 and an anti-ferromagnetic magnetization direction pinning layer 40 comprising MnPt is formed on the pinned layer 38. A protective layer 42 is then formed on the pinning layer 40 by using the same material (NiFeCr or NiCr) as the material of the seed layer 32.

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CAP	42 保護層
PINNING	40 磁化方向固定作用層
PINNED	38 磁化方向被固定層
Cu	36 スペース層
NiFe	34 フリー層
NiFeCrまたはNiCr	32 シード層
SUB.	30 基体